



MANUAL

\*\*\*\*\*

## CONTENTS

1. P.C.BOARD SPECIFICATIONS .....	1
2. DIP SWITCHES .....	3
3. CONNECTOR DIAGRAMS .....	5
4. DIAGNOSTIC TEST .....	7

## 1. P.C.BOARD SPECIFICATIONS

### POWER SUPPLY:

VOLTAGE        5V  $\pm$  5%  
                  12V  $\pm$  10%

AMPERE        5V MAX. 5A  
                  12V MAX. 1A

### MONITOR INTERFACE:

VIDEO SIGNALS ... TTL POSITIVE  
SYNC SIGNALS ... TTL NEGATIVE (COMPOSITE SYNC)  
HORIZONTAL FREQUENCY ... 15.723KHz  
H.PERIOD ... 63.6  $\mu$  s  
H.BLANK ... 15.6  $\mu$  s  
H.SYNC PULSE ... 6.0  $\mu$  s  
VERTICAL FREQUENCY ... 60.0Hz  
V.PERIOD ... 16.663ms  
V.BLANK ... 1.40ms  
V.SYNC PULSE ... 318  $\mu$  s

TOLERABLE:	WHILE OPERATING	IN STORAGE
TEMPERATURE	0 TO 50 °C	-5 TO 60 °C
RELATIVE HUMIDITY	20 TO 70%	NO MORE THAN 80%
VIBRATION	NO MORE THAN 0.5G	NO MORE THAN 1.0G
DROPPING DISTANCE	NO MORE THAN 0 cm	(When packed) NO MORE THAN 50 cm

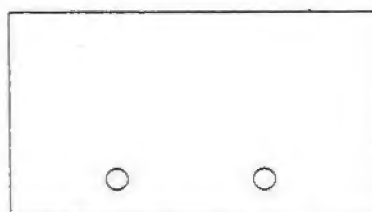
## 2. DIP SWITCHES

### DIP SW1

		SW 1							
		1	2	3	4	5	6	7	8
Given holes (Stroke play)	2	OFF							
	1	ON							
Given holes (Match play, Skins game)	2		OFF						
	1		ON						
Difficulty	NORMAL			OFF					
	HARD			ON					
Control panel (See below)	2 Joysticks					OFF			
	4 Joysticks					ON			
Any button starts game	NO						OFF		
	YES						ON		
Sound in attracting mode	NO							OFF	
	YES							ON	
Diagnostic test	NO								OFF
	YES								ON

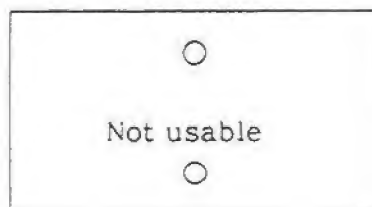
\* CABINET(DIP 2-2) & CONTROL PANEL(DIP 1-5)

☆ One side(Upright type): 2 joysticks  
DIP 2-2・OFF, 1-5・OFF



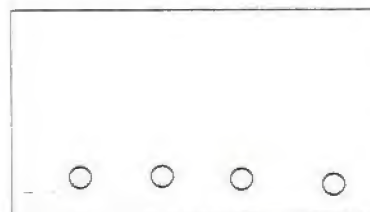
1P 2P  
3P 4P

☆ Both sides(Table type): 2 joysticks  
DIP 2-2・ON, 1-5・OFF  
2P・4P



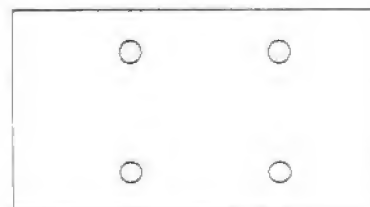
1P・3P

☆ One side(Upright type): 4 joysticks  
DIP 2-2・OFF, 1-5・ON



1P 2P 3P 4P

☆ Both sides(Table type): 4 joysticks  
DIP 2-2・ON, 1-5・ON  
3P 4P



1P 2P

※ The game is not programmed to be played with 1 joystick only on the control panel.

DIP SW2

			SW 2							
			1	2	3	4	5	6	7	8
FLIP PICTURE	NO		OFF							
	YES		ON							
CABINET TYPE	UPRIGHT			OFF						
	TABLE			ON						
COIN CHUTES	SHARED				OFF					
	SEPARATE				ON					
COIN MODE	MODE 1		1 COIN 1 PLAY			OFF	OFF	OFF	OFF	OFF
			2 COINS 1 PLAY			OFF	ON	OFF	OFF	OFF
			3 COINS 1 PLAY			OFF	OFF	ON	OFF	OFF
			4 COINS 1 PLAY			OFF	ON	ON	OFF	OFF
			5 COINS 1 PLAY			OFF	OFF	OFF	ON	OFF
			6 COINS 1 PLAY			OFF	ON	OFF	ON	OFF
			1 COIN 2 PLAYS			OFF	OFF	ON	ON	OFF
			1 COIN 3 PLAYS			OFF	ON	ON	ON	OFF
			1 COIN 4 PLAYS			OFF	OFF	OFF	OFF	ON
			1 COIN 5 PLAYS			OFF	ON	OFF	OFF	ON
			1 COIN 6 PLAYS			OFF	OFF	ON	OFF	ON
			2 COINS 3 PLAYS			OFF	ON	ON	OFF	ON
			3 COINS 2 PLAYS			OFF	OFF	OFF	ON	ON
			4 COINS 3 PLAYS			OFF	ON	OFF	ON	ON
			1 COIN CONTINUE			OFF	OFF	ON	ON	ON
			FREE PLAY			OFF	ON	ON	ON	ON
	MODE 2	* A	1 COIN 1 PLAY			ON	OFF	OFF		
			2 COINS 1 PLAY			ON	ON	OFF		
			3 COINS 1 PLAY			ON	OFF	ON		
			5 COINS 1 PLAY			ON	ON	ON		
		** B	1 COIN 2 PLAYS			ON			OFF	OFF
			1 COINS 3 PLAYS			ON			ON	OFF
			1 COINS 5 PLAYS			ON			OFF	ON
			1 COINS 6 PLAYS			ON			ON	ON

\* COIN CHUTE A

\*\* COIN CHUTE B

- Please turn off the power switch before changing the DIP SW setting, or the change may not take effect.
- Continue Coin is the mode which starts the game with 2 coins, but continues it with 1 coin alone. When this mode is set, no other coin modes can be set.

CN 5

1	GROUND
2	3P. RIGHT
3	3P. LEFT
4	3P. DOWN
5	3P. UP
6	3P. START/COIN
7	
8	3P. SW B (MODE SELECTION)
9	3P. SW A (SHOT)

CN 4

1	GROUND
2	4P. RIGHT
3	4P. LEFT
4	4P. DOWN
5	4P. UP
6	4P. START/COIN
7	
8	4P. SW B (MODE SELECTION)
9	4P. SW A (SHOT)

※ Use No.6 pin of connector CN4 and CN5 as START SW when Dip Switch 2-3 is turned OFF, and use it as COIN SW when Dip Switch 2-3 is turned ON.

※ Use horizontally positioned CRT monitor, and 2-WAY joysticks, each with two push buttons.



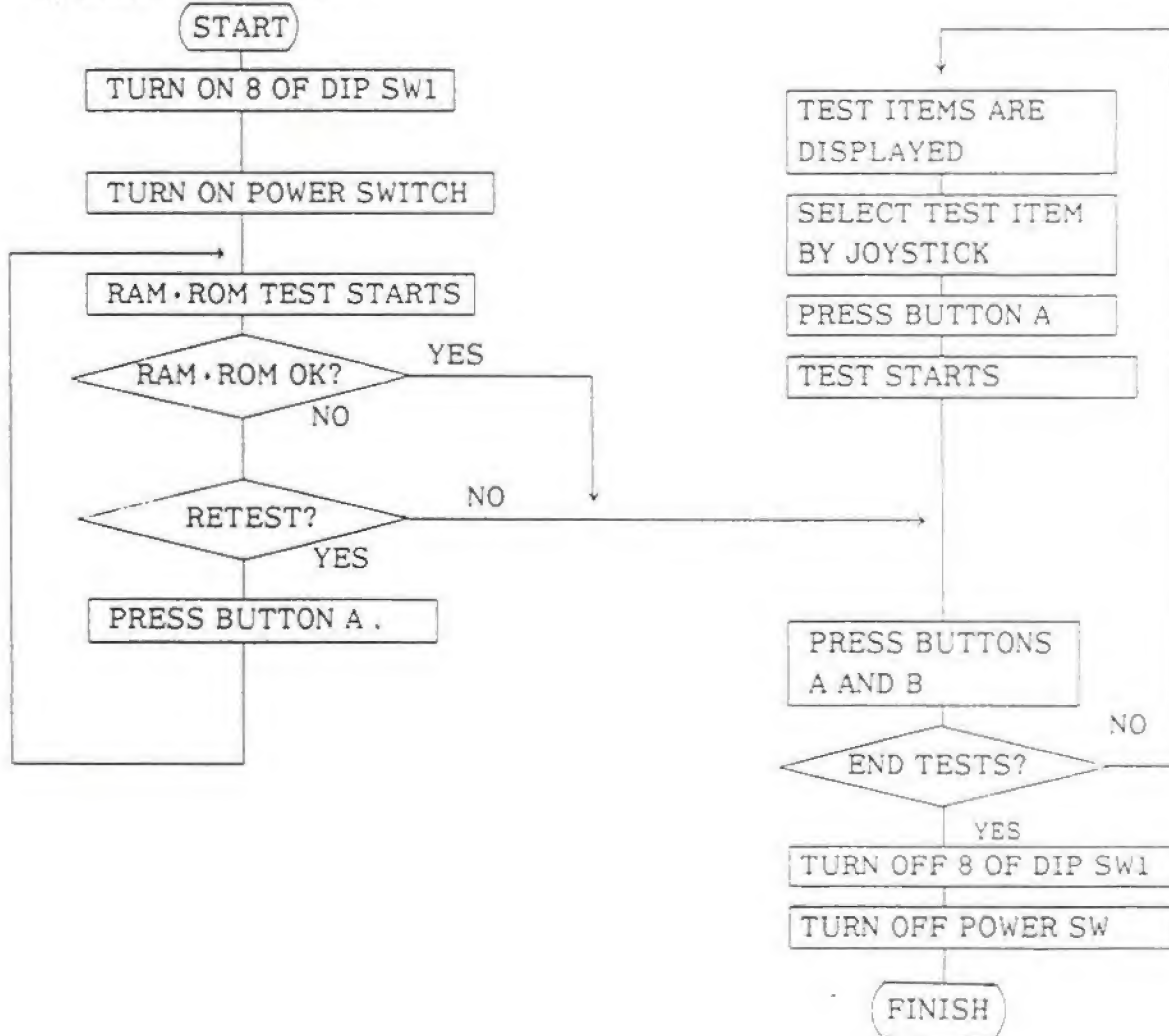
#### 4. DIAGNOSTIC TEST

As soon as No.8 of DIP Switch 1 is turned "ON" and the power switch is turned on, RAM•ROM test starts. When the test result appears on the screen, program is ready for the test mode selection.

To finish the test mode, turn off No. 8 of DIP Switch 1 and power switch.

※ Use 1P joystick, buttons A and B in the test mode.

##### 1) Test Procedures



## 2) RAM and ROM Test

Although the picture does not appear on the screen and only various patterns appear on it for a while after turning on the power switch, RAMs for the picture are being tested during this time. RAM and ROM Test is carried out everytime power switch is turned on.

- \* When RAMs and ROMs are good, "OK", "RAM OK" and "ROM OK" will appear.
- \* If RAM(s) is(are) not good, "RAM NG" and the problem will appear on the screen.
- \* If ROM(s) is(are) not good, "ROM NG" will appear on the screen.

When RAMs and ROMs properly work after this RAM ROM Tests, press buttons A and B for 1p to go to the next test. In case any RAM(s) or ROM(s) is (are) found faulty after the test, the test will be repeated.

### 3) Test Item Selection and Start

The following test items are shown so that you may select an item you want to test by moving joystick up and down. Press button A to start the test of the item indicated in green. Press buttons A and B to stop the test of the item.

- |              |  |
|--------------|--|
| 1. IN PORT   | ... Test of dip switches, buttons, etc.            |
| 2. SOUND     | ... Test of sound                                  |
| 3. CHARACTER | ... Test of character display                      |
| 4. SCREEN    | ... Test of color and distortion on monitor screen |
| 5. OPTION    | ... Test of ticket dispenser                       |
| 6. EXIT      | ... Stops the test mode                            |

(1) IN PORT Test

This test shows the status which DIP Switches, Buttons and Joysticks are turned "ON".

[illegible][illegible]



## (2) SOUND Test

The screen shows the number of each sound and the test is done about whether the corresponding sound is given.

To carry out next sound test, move 1P joystick down.

SOUND ○○

## (3) CHARACTER Test

The player character is displayed on the screen.

Normal position	Horizontally reversed
Vertically reversed	Horizontally and vertical ly reversed

Make sure that the same character is shown in four different positions, each vertically and horizontally reversed, as shown on the left.

## (4) SCREEN Test

By pressing the 1P joystick, the test can be advanced like 1 - 2 - 3 - 4 - 5 - 6 - 7 - 8 - 9 - 10 - 1, test of colors, balance and distortion on the monitor screen.

1. The whole screen shows only BLUE color.
2. " RED
3. " MAGENTA
4. " GREEN
5. " CYAN
6. " YELLOW
7. " WHITE
8. Figure A is displayed on the screen.
9. Figure B is displayed on the screen.
10. Figure C is displayed on the screen.

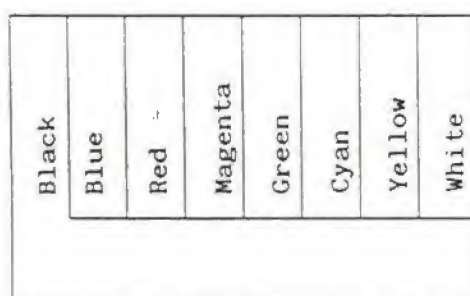
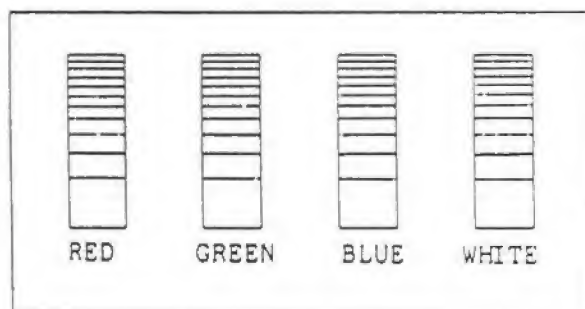


Figure A

Color bars (in 16 grades)



Brighter

Darker

Figure B

Crosshatch Pattern (drawn with 1-dot white lines)

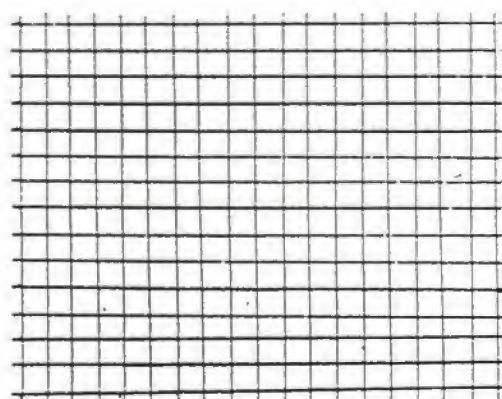


Figure C

15 lines

20 LINES

HORIZONTAL FREQUENCY 15.723KHz

H.PERIOD ..... 63.6  $\mu$  sec

H.SYNC PULSE

H.BLANKING 4.8  $\mu$  sec

H.BLANK .....

VERTICAL FREQUENCY ..... 60.00Hz

V.SYNC PULSE

V.BLANKING

